

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Canceled)
2. (Previously Presented) The driving circuit for a vacuum fluorescent display according to claim 4, wherein based on the detection signal, the driving circuit for a vacuum fluorescent display outputs a signal for notifying that the level of the pulse voltage is fixed.
3. (Canceled)
4. (Currently Amended) A driving circuit for a vacuum fluorescent display, comprising:
a counting unit configured to count the number of fixed-width pulses per predetermined time period of a pulse voltage for pulse-driving a filament of the vacuum fluorescent display; and
a detecting unit configured to output a detection signal indicating that the level of the pulse voltage is fixed, when detecting that the number of pulses per predetermined time period, counted by the counting unit, is equal to or is less than the number of a reference pulse number.
5. (Canceled)
6. (Currently Amended) A driving circuit for a vacuum fluorescent display, comprising:
a counting unit configured to count a time period for which the level of a DC voltage produced by integrating a pulse voltage for pulse-driving a filament of the vacuum fluorescent display, shifts to the level indicating that the level of the pulse voltage is fixed, the pulse voltage for pulse-driving the filament comprising, in a normal state, fixed-width pulses; and

a detecting unit configured to output a detection signal indicating that the level of the pulse voltage is fixed, when detecting that the time period counted by the counting unit is equal to or longer than a predetermined time period.

7. (Previously Presented) A driving circuit for a vacuum fluorescent display, comprising:
a detecting unit configured to detect that the level of a pulse voltage for pulse-driving a filament of the vacuum fluorescent display is fixed, and to output a detection signal indicative of the result of the detection, the detecting unit further comprising:
a pulse detecting unit configured to detect that the level of the pulse voltage is fixed, based on the number of pulses per predetermined time period of the pulse voltage,
a level detecting unit configured to detect that the level of the pulse voltage is fixed, based on the level of a DC voltage produced by integrating the pulse voltage, and
a selecting unit configured to select the output of the pulse detecting unit or the output of the level detecting unit.

8. (Previously Presented) The driving circuit for a vacuum fluorescent display according to claim 7, wherein the selecting unit selects the output of the pulse detecting unit or the output of the level detecting unit, based on data for selecting the output of the pulse detecting unit or the output of the level detecting unit.

9. (Previously Presented) The driving circuit for a vacuum fluorescent display according to claim 4, wherein the driving circuit for a vacuum fluorescent display is a semiconductor integrated circuit further comprising:

a filament pulse controlling unit configured to output a pulse-driving signal for pulse-driving the filament; and

a terminal to which a switching element for generating the pulse voltage based on the pulse-driving signal, is operable to be externally connected.

10. (Previously Presented) The driving circuit for a vacuum fluorescent display according to claim 4, further comprising:

a filament pulse controlling unit configured to output a pulse-driving signal for pulse-driving the filament; and

a switching element for generating the pulse voltage based on the pulse-driving signal.

11. (Canceled)

12. (Previously Presented) The driving circuit for a vacuum fluorescent display according to claim 4, wherein the driving circuit for a vacuum fluorescent display is a semiconductor integrated circuit, further comprising:

a filament pulse controlling unit configured to output a pulse-driving signal for pulse-driving the filament; and

a switching element for generating the pulse voltage based on the pulse-driving signal.

13. (Previously Presented) The driving circuit for a vacuum fluorescent display according to claim 6, further comprising an integrating circuit for integrating the pulse voltage so as to produce the DC voltage.

14. (Previously Presented) The driving circuit for a vacuum fluorescent display according to claim 6, wherein the driving circuit for a vacuum fluorescent display is a semiconductor integrated circuit, further comprising a terminal to which an integrating circuit for integrating the pulse voltage so as to produce the DC voltage, is operable to be connected.

15. (Currently Amended) A driving circuit for a vacuum fluorescent display, comprising:
a filament driving unit configured to pulse-drive a filament of the vacuum fluorescent display with a pulse voltage;

a grid driving unit configured to drive a grid electrode of the vacuum fluorescent display;

a segment driving unit configured to drive a segment electrode of the vacuum fluorescent display;

a detecting unit configured to output a detection signal indicating that the level of the pulse voltage is fixed, when detecting that the level of the pulse voltage is fixed, based on the

number of fixed-width pulses per predetermined time period of the pulse voltage or on a DC voltage produced by integrating the pulse voltage; and

a control unit configured to control the filament driving unit, the grid driving unit, and the segment driving unit, in order to terminate the driving of at least one of the filament, the grid electrode, and the segment electrode, based on the detection signal.

16. (Previously Presented) The driving circuit for a vacuum fluorescent display according to claim 15, wherein based on the detection signal, the control unit controls the filament driving unit, the grid driving unit, and the segment driving unit, such that at least one of the pulse voltage for driving the filament, the voltage for driving the grid electrode, and the voltage for driving the segment electrode, is at the level for terminating the driving of the filament, the grid electrode, and the segment electrode.

17. (Previously Presented) The driving circuit for a vacuum fluorescent display according to claim 15, wherein the control unit puts at least one output of the outputs of the filament driving unit, the grid driving unit, and the segment driving unit in a high-impedance status, based on the detection signal.

18. (Previously Presented) The driving circuit for a vacuum fluorescent display according to claim 15, wherein the driving circuit for a vacuum fluorescent display outputs a signal for notifying that the level of the pulse voltage is fixed, based on the detection signal.

19. (Previously Presented) The driving circuit for a vacuum fluorescent display according to claim 15, wherein the driving circuit for a vacuum fluorescent display is a semiconductor integrated circuit, further comprising a terminal to which a switching element for generating the pulse voltage based on the output of the filament driving unit, is operable to be connected.

20. (Previously Presented) The driving circuit for a vacuum fluorescent display according to claim 15, further comprising a switching element for generating the pulse voltage based on the output of the filament driving unit.

21. (Previously Presented) The driving circuit for a vacuum fluorescent display according to claim 6, wherein, based on the detection signal, the driving circuit for a vacuum fluorescent display outputs a signal for notifying that the level of the pulse voltage is fixed.

22. (Previously Presented) The driving circuit for a vacuum fluorescent display according to claim 6, wherein the driving circuit for a vacuum fluorescent display is a semiconductor integrated circuit, further comprising:

- a filament pulse controlling unit configured to output a pulse-driving signal for pulse-driving the filament; and

- a terminal to which a switching element for generating the pulse voltage based on the pulse-driving signal, is operable to be externally connected.

23. (Previously Presented) The driving circuit for a vacuum fluorescent display according to claim 6, further comprising:

- a filament pulse controlling unit configured to output a pulse-driving signal for pulse-driving the filament; and

- a switching element for generating the pulse voltage based on the pulse-driving signal.

24. (Previously Presented) The driving circuit for a vacuum fluorescent display according to claim 6, wherein the driving circuit for a vacuum fluorescent display is a semiconductor integrated circuit, further comprising:

- a filament pulse controlling unit configured to output a pulse-driving signal for pulse-driving the filament; and

- a switching element for generating the pulse voltage based on the pulse-driving signal.